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AUTHOR Gerig, Gaylord E.
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ABSTRACT

Described is the Summarized Factorial Assessment Outline (SFAO), a total assessment procedure for educable mentally retarded and learning disabled students which is centered on the three diagnostic processes of identification, interpretation, and prescription for remediation. Following an introduction covering the problem, purpose, need, and limitations of the study are sections which include a review of the literature (with discussions of behavior, academic performance, and statistical measurement), a description of the typical assessment process (including a review of the typical classroom measurement, system-wide assessment, and individualized measurement of educational adequacy, as well as weaknesses within the typical measurement), the assessment procedure steps (such as behavioral observation) of the SFAO, the data assessment program for three elementary level underachievers, and interpretation of the data and prescription for remediation of the three case studies. It is concluded that the SFAO can be used by the clinician with any of the present standardized assessment instruments and provides for an increased clarity in the process of identification, interpretation, and prescription for remediation. Among appendixes are a glossary of terms, information on the behavioral observation chart, and a sample summarized statistical profile chart. Also provided is a bibliography with 74 entries. (SB)

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THE SUMMARIZED FACTORIAL ASSESSMENT OUTLINE: A STRUCTURAL PARADIGM FOR EMR AND L-D ASSESSMENT

By

Gaylord E. Gerig

B. A., Taylor University, 1949

M. A., University of Michigan, 1960

Robert W. Pitcher, Ph. D., Advisor
Baldwin-Wallace College
Berea, Ohio

A Dissertation Submitted in Partial Fulfillment of
The Requirements for the Degree of
Doctor of Philosophy

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Gaylord E. Gerig
160 Quail, Unit 52
Perrysburg, Ohio 43551

ABSTRACT

THE SUMMARIZED FACTORIAL ASSESSMENT OUTLINE: A STRUCTURAL PARADIGM FOR EMR AND L-D ASSESSMENT

An adequate education for all our youth has been extended to include special programs for exceptional children. This study is directed to the consideration of a total assessment procedure for EMR and L-D pupils.

Assessment by a multi-dimensional instrument is mandated by the state of Ohio for eligibility in the EMR and L-D programs. A typical assessment is made on an instrument such as the Wechsler Intelligence Scale for Children--Revised (WISC-R). The WISC-R is comprised of twelve sub-tests but is scored on the basis of two I Q scores: the Verbal and Performance Scales. The factorial areas of the sub-tests measure achievement, but the I Qs are based on the Scale composite scores.

The thesis of this study is centered on the presentation of the Summarized Factorial Assessment Outline, a paradigm designed to extend specificity to the assessment process for pupils with learning problems.

The SFAO is a paradigm designed to maximize the influence of the factorial areas of the test instrument. A classificatory system based on the receptive and expressive functions of the verbal and nonverbal symbol systems is presented. This classificatory system is readily adaptable to the sub-test or factorial areas of standardized test instruments.

The Summarized Statistical Profile Chart is also presented in this paradigm to present the total test data in a visible and a viable profile. The stanine-range format of the SSPC permits the use of both the interpersonal and intrapersonal concepts for comparing test data.

The diagnostic function of the SFAO is centered on the three processes of identification, interpretation, and prescription for remediation. The SFAO provides a structure for specificity in diagnosing learning problems which cannot be achieved through a typical assessment procedure.

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CHAPTER I

INTRODUCTION

Problem

Consideration for education and a general plan for schools in the United States was begun early in the colonial period to encourage and to provide for the establishment of a literate population. The organized church desired education to promote the individual reading of the Scriptures while the secular and political leaders wished for an informed citizenry. The early schools were generally founded on a local level, but official responsibility for education was later transferred to the several and individual states.

This early public interest in education has not diminished and is supported by compulsory school laws. Recent trends in education have broadened the definitional and functional base of the educational system. Education for pupils with special needs is but one example and is the concern of this study.

A number of states, including Ohio, have mandated programs to aid the pupil with learning problems. A revised program in special education was enacted by the General Assembly of the state of Ohio in the summer of 1973 and officially inaugurated during the 1973-1974 school year (50:52). This revised program recognizes a diversity of learning problems and provides for several specific classes of needs. Qualifying criteria for these several classes are mandated in terms of an I Q score

range. Problems in the application of this program have been encountered and several are a basic part of this study.

An initial problem in application arises when the composite score is the sole criteria utilized for the measurement of test performance. Reliance on the composite score results more in classifying pupils with problems than in providing for the identification of specific problems in learning.

The literature indicates that authorities differ relative to the incidence of specific learning problems. Frostig estimates that from 15 to 20 per cent of the population may be experiencing some degree of learning disablement (18:388).

Because the school staff has a concern for pupils experiencing exceptional problems in learning, many staff personnel initiate referrals for academic assessment. The teacher's assessment of inadequacy is based on a number of generally unstructured criteria. At least some of these criteria are comparative in nature. One method of teacher assessment is the comparing of one pupil's work with that of his classmates. Another form of comparison is made in the general terms of standard expectations for the pupil's age and grade levels. There are several basic means for such a classroom appraisal. One of the considerations is quantitative, the amount of the task completed by the pupil. Another consideration of this appraisal is qualitative. Qualitative measurement is in terms of the adequacy or of the accuracy of the material which has been presented by the pupil.

Three questions express the general concern and inquiry typically noted on the referral form of pupils who are experiencing problems in learning. A first question concerns the general ability of the pupil. The capacity of the pupil to achieve

may also be questioned. A second question refers to the educational placement of the pupil. A question or a suggestion regarding special education placement is often included. A third inquiry concerns the possibility of techniques for remediation. This remediation might be more accurately defined as a prescription for techniques which may be utilized with this pupil. These questions constitute the major problems of this study. The problems will be considered through the processes of identification, interpretation, and prescription.

Identification

Three levels are involved in the identification process. The first level concerns the empirical identification of the pupil who is encountering learning problems. Empirical evidence is observed by the teacher in noting that a specific pupil is functioning significantly below his peers and below the normal expectation for the age and grade level. A referral on the basis of this empirical identification is then made for further evaluation.

A second level of identification is made by the school psychologist in terms of the mandated qualifications for special needs in education. The special needs areas considered here are limited to the educable mentally retarded (EMR) and the learning-disabled (L-D) groups. The composite scores of the multi-dimensional tests, the Stanford-Binet (S-B) or the Wechsler Intelligence Scale for Children (WISC), are then gained. Composite scores are statistical entities referred to as the I Q score. A 50 to 80 I Q limit is established for EMR class placement (50:35; 52:35). The

composite scores of these multi-dimensional tests provide the general abilities factor as measured by these test instruments.

A third level in identification by the school psychologist is in terms of the specificity of the learning difficulty. Concerns of this concept are relative to the what, the where, and the how much factors in reference to specific learning problems. Factors of specificity are more discriminatory and problem-centered than are the paraphrased questions of the teacher's referral. Referral questions are concerned with the general abilities of the pupil and with the possibilities of special class placement.

Several words used in the discussion of identification, interpretation, and prescription are given a definition somewhat different from that of common usage and are included in Appendix A.

Interpretation

The interpretation of the data gained in the identification process must be a part of this total assessment of academic performance. Some aspects of interpretation are exercised during the identification procedure. Impressions gained through observation of the work patterns and the problem-solving behavior of the pupil are noted in the test-solving process. E.g., the examiner can note that the child practices reversals. A reversal occurs when the child writes saw in copying the stimulus word was.

Another task of interpretation is to note the test-measured integrities and the test-measured deficits (Appendix A). The degree of deficit is determined by the

variance between the areas of integrity and deficit and must be considered in the interpretation process. These integrities and deficits must also be interpreted in relation to the functions and modalities which are involved.

Remediation is a culminating concern in the paradigm for assessment presented in this study. However, the remedial process is more literally achieved within the environment of the classroom. Therefore, no specific emphasis beyond prescription will be placed on remediation in the discussion of this paper.

Prescription

The prescriptive process is involved in the planning and in the arrangement of remedial methods and procedures to meet the specific needs of the pupil. A view of these specific needs is gained through both the identification and the interpretative processes. The identification process is instrumental in revealing the problem area. The interpretative process is involved in determining the degree of the problem and the developmental level at which success can be consistantly achieved. Specificity is achieved in both identification and in prescription.

Purpose

The general purpose of this study is to present a paradigm which professionals in education can utilize in a program of assessment of the pupil who is experiencing exceptional problems in learning. Several factors of this purpose are considered separately.

The first factor is a method of evaluating the areas of learning needs. The

symbol systems, functions, and modalities involved in the total learning process are included in these areas of need.

The second factor is the establishment of a greater degree of specificity in terms of learning needs of the individual pupil than is achieved through the exclusive use of a general abilities, composite test score.

A third factor of this total assessment program is prescription for the specific needs which have been identified for the pupil. This prescriptive emphasis can be considered multi-factored in its total effect. One prescriptive emphasis is a guideline for remediation within the classroom; consultation is another. This consultative role may be extended throughout the school year as needs arise in the remedial process.

Several additional benefits can be realistically expected from this new paradigm. One benefit can be obtained through the involvement of the parents during the evaluation, planning, and remedial phases of this total program. Another benefit is the team effort of the special area personnel working with the classroom teacher in meeting the needs of the exceptional learner. This more global involvement is believed to be a definite factor in providing for the optimum in the educational program of the pupil who is experiencing specific learning needs.

Need

The major emphasis of this paper is focused on the needs of the professional in educational evaluation. The presentation and discussion of the paradigm are

oriented to the needs of the examiner. In most instances the examiner will be a school psychologist.

An initial need is for a structural model in total assessment. This structural paradigm should be basic and specific in its design and diagnostic in its purpose. Established test instruments appear to be adequate for assessment. Specificity implies that recognition is given to the measured performance on sub-tests or factorial areas. The diagnostic emphasis includes the processes of identification, interpretation, and prescription for remediation.

A second need is for as much universality as is possible in the application of the structural factors of such a paradigm. This factor of universality should be sufficient to meet the needs of both the pupil and the school. Sufficient specificity should be provided to fulfill the varied and individual needs of the pupil. The scope of the assessment program should be of sufficient breadth to fulfill minor variations and specific requirements of programs mandated by the several states.

Other persons than the professional in educational evaluation are interested and are often involved with the exceptional learner. The needs of these other persons require a different format for the presentation and discussion of pertinent concerns. The needs of this latter group may not be adequately fulfilled within the focus of this paper. Such presentations are more capably met through educational workshops and handbook materials for the educator and in the form of descriptive articles for the interested layman.

Limitations

This study will be limited to the consideration of pupils who are referred as possible candidates for an EMR or L-D class placement. Referrals are based on an informal assessment by the staff members of the school or on parental request.

This study will also be limited to the total assessment process. Three specific areas or levels of assessment procedure--identification, interpretation, and prescription for remediation--will be considered. The specific procedures of remediation within the classroom per se will not be included.

CHAPTER II

A REVIEW OF THE LITERATURE

Many of the concepts utilized in the new paradigm for the measurement of academic performance are well established in the literature. Early references to educational assessment and school psychology date to the late nineteenth and the early twentieth centuries (73:1-3).

Studies from the ERIC and the Xerox Microfilm materials have been provocative and helpful, but the major influence for the new paradigm has been from the basic literature and from the field practice of school psychology.

One of the early concepts in the measurement of academic ability or performance is that of mental age, M A (69:164; 72:24). Mental age is now an established part of the total concept of evaluation and is credited in a major degree to Alfred Binet (24:777; 72:24-25). The pupil's M A is determined by the age equivalency gained on his test-measured performance (23:161).

The introduction of the concepts of factor analysis and primary abilities provided both breadth and refinement to the assessment of performance (25:512-516). Thurstone's six primary abilities concept, which was developed in the late 1930s, broadened the scope of academic assessment. These six predominant factors were the "Verbal (V), Number (N), Spatial (S), Word fluency (W), Memory (M), and Reasoning

(R)" (11:256). An extension of these primary mental abilities (PMA) factors was effected by Thurstone's continuing study and research.

The primary abilities concept is utilized in psychological test instruments such as the S-B and the WISC. The primary factors concept is obvious in the very structure of the WISC through the Verbal and Performance Scales and their respective sub-tests. The presentation of the varied items of one specific factorial group is less obvious on the S-B as these factorial items are placed at the varied age levels and not in one separate and distinguishable sub-test as is done on the WISC.

There are several divergent views relative to what factor analysis really determines. Some feel that biological nature determines what factors are found; others believe that environment and opportunity (the chance to learn) are the determinant factors (11:261-262). A realistic role is one which accepts that a determining influence may be exerted by any or all the biological, the environmental, and the behavioral factors. This holistic view considers man as a unified being. Human abilities and behaviors are accepted as parts of the whole functional organism, and the tendency to fragmentize and segment abilities and behavior is avoided (23:551).

A holistic view of the pupil in the total learning process is accepted within the conceptual framework of the paradigm presented in this study. Consideration of both behavior and academic performance is involved in the total process of assessment of exceptional problems in learning. The administration of standardized testing instruments lends little to the assessment of behavioral factors per se. Some behaviorists suggest that behavioral factors are the major concerns in learning. Behavior and academic performance as measured on the factorial areas are both involved in the total

consideration of specific learning problems. Both view points are discussed in the literature. Unification of these two views of behavior and academic performance is within the format of this paradigm.

The general abilities concept, exemplified by the composite score of multi-dimensional and multi-factored tests, is not adequate as a diagnostic approach to the identification of specific learning problems. Basic factorial areas are presented on tests such as the WISC. Factorial data should be used to the greatest possible extent in the identification and interpretation of specific learning problems. A new paradigm must propose such a maximal use of these measured data of the factorial areas.

Although basic recognized and accepted concepts are utilized in the new paradigm, there is some rearrangement of the concepts and some changes in emphasis. However, the concepts per se are not violated. Super suggests such a procedure for presenting a new theoretical arrangement or format for a new application of knowledge or for the extending of knowledge is totally legitimate:

> Theories, as I understand them, seek to organize knowledge. They do this, both to facilitate research which will add to the store of knowledge, and to make our present knowledge useful in practice. When theories are incomplete, when data on some topic are unavailable or inadequate, no theory can be truly comprehensive. All we can hope for, in such circumstances, is segmental theories, that is theories which organize whatever we do know on a given segment of a topic, and for the provisional organization of these incomplete segments into imperfect wholes (65:9).

Therefore, a new paradigm with an unique conceptual arrangement can be presented as an approach to the gaining of new insight and more information from the assessment data. The presentation and utilization of an unique paradigm should be within the broad parameters of a context comparable to that stated by Super.

Such a paradigm will be presented in this study and will be referred to as the Summarized Factorial Assessment Outline (SFAO).

Behavior

Behavior is a definite and integral factor in learning. A broad range of behavioral theory is integrated in this study. Some specific views of Flanders, Glasser, Harris, and Stephens are noted later.

The concepts of task expectancies, of responsibilities, of the acceptance of others, and of the self-concept of Glasser and Harris are conceptual factors of behavior within the structure of the SFAO. The construction of the paradigm includes a consideration of the behavior patterns of the pupil.

A study of behavior is effected through objective observation and the recording of this behavior on a Behavioral Observation Chart (BOC). The influence of Flanders (14; 15; 16; 17) relative to interaction within the classroom is noted. A copy of the Behavioral Observation Chart is presented as Appendix B.

Academic Performance

A second broad area of achievement can be thought of in terms of academic performance. Academic performance can be observed and measured objectively in a manner hardly possible for behavior. This area of academic performance and its assessment is considered in view of the literature.

There are several ways in which types of knowledge are classified. Rapaport, Gill, and Schafer refer to two basic types of knowledge: concrete knowledge

and abstract knowledge (57:65). Wechsler quotes Thorndike in citing three forms of intelligence or knowledge:

> (1) abstract, or verbal intelligence, involving facility in the use of symbols; (2) practical intelligence, involving facility in manipulating objects; (3) social intelligence, involving facility with human beings (72:8).

The consideration of types of knowledge and of a broad interpretation and acceptance of the concept of primary factors must be utilized in the diagnostic assessment of the pupil with exceptional problems in learning.

The use of composite scores for multi-dimensional test instruments has been influenced by, among other things, the concept of primary factors. These composite scores are utilized for the varied age levels of the S-B as well as for the varied sub-tests of the Verbal and the Performance Scales of the WISC. Composite scores represent the general abilities of the pupil as measured by the testing instruments.

A full utilization of the varied sub-tests of a multi-dimensional instrument and the critical observation of the varied responses, including behavioral responses, are essential in assessment. Rapaport, Gill, and Schafer found "that one must consider not only every sub-test score, but every single response and every part of every response, as significant and representative of the subject" (58:67). They also found that sub-test variance was important and "representative of the subject" (57:68). This same concept of a full range of tasks in assessment is emphasized by the assertation that "no single test proves to yield a diagnosis in all cases, or to be in all cases correct in the diagnosis it indicates" (57:47).

Several factors involved with academic assessment are relative to the concepts of progressive maturation and adequacy. Rapaport, Gill, and Schafer state,

"If one wishes to use the intelligence-test record to greatest benefit, one must make an effort to differentiate these influences as much as possible. In order to do so, we found it necessary to start out with a concept of natural endowment--that is, a potentiality unfolding in a process of maturation" (57:65). Jersild extends this concept of progressive maturation by presenting specific tables of the average chronological age at which various activities are considered as normal expectations (32:100, 102).

The concept of adequacy is of specific importance when assessment in terms of exceptional problems in learning is considered. Integrities will be the term utilized in this paper to designate the specific areas of adequacy. These integritites, or areas of adequacy in performance, are based on the broad range of levels of expectancy. E.g., an integrity demands performance at or above average on the norms of the peer group of which the pupil is a member. This average is gained by comparing the pupil's scores with the norms for his peer group. These peer group norms are based upon some factor of commonality for the varied persons in this specific group. Johnson and Myklebust (33) and Kirk and Kirk (37) refer to the concept of integrities, basic adequacy, as a specific factor in the diagnosis of specific learning deficits. This concept of basic adequacy is relative to performance in terms of peer group norms and is standard for virtually all assessment instruments (66:71).

Deficits is the term used in this study to denote performance which varies from the point of adequacy. Deficits are referred to in two separate connotations. The first connotation refers to the norms of the peer group. This use of deficit indicates performance which is scored at a below average range in the group norms. The second connotation is relative to the variance of the several tests or sub-tests of a specific

pupil. E.g., a verbal score in the fourth stanine and a nonverbal score in the seventh stanine would be considered to be variant to a significant degree. These concepts of integrities and deficits become very important in the diagnostic assessment of pupils with exceptional problems in learning. They are especially important when remediation and possible special class placement are considered.

Johnson and Myklebust state that the "common practice on the part of special education has been to classify as educable mentally handicapped those children falling within the range of 50 to 75 or 80 I Q; those falling above 80 I Q are not classified as needing special education. If these ranges are accepted, the limits for learning disability would begin with 80 I Q" (33:13). A more definitive statement in terms of L-D classification is also presented by Johnson and Myklebust. "On the basis of our experience, as well as on research evidence, we include in the learning disability group all children attaining an I Q of 90 on either a verbal or a nonverbal measure; we do not use the total I Q as the determining score" (33:14).

The academic performance area is to be structured by the new paradigm. Performance is measured in terms of classificatory factors. These classificatory factors are considered as broad divisions within a factorial concept. There are three divisions in this system of classification--symbol systems, functions, and modalities.

The first division is symbol systems, verbal and nonverbal. Recognized by Thurstone, Binet, and Wechsler, and many others as being primary factors in knowledge and learning, these two symbol systems are also the two formal modes for man's communicating and recording.

The second division is the functions by which the symbol systems are encoded and decoded. Johnson and Myklebust (33) and Kirk and Kirk (37) refer to the importance of these functions. The receptive or imput function and the expressive or output function are the two means of dealing with and operating the symbol systems.

The third division is comprised of the four modalities which are the most directly involved with learning as experienced in the pre-school and in the classroom experience. These modalities are the auditory, the visual, the motor, and the tactile. All references to learning concern one or more of these modalities (33; 37; 66; 71).

The symbol systems and functions within these cited modalities are emphasized within this new paradigm because of their vital role within the experiences of man. Since these classificatory factors are a basic part of our learning and of our communicating, they are considered to be the realistic mode for the measurement of academic performance.

Statistical Measurement

The degree of significance relative to the variation in test scores is based on statistical measurement. The generally accepted lower limit of significance in variation is placed at a measurement of one standard deviation (58). This significance in variation may also be expressed in terms of the stanine scale. Two stanines are equivalent to one measure of standard deviation (58:8; 8;41) A copy of the standard bell-shaped curve and the varied systems of statistical measurement are presented as Appendix C (58:8).

The test data of this paper will be profiled within the stanine range system. The stanines are included on the bell-shaped curve presented as Appendix C. The

obtaining of the specific scores, which are then converted to the stanine range, is achieved within one of several accepted methods. The first method is to make a direct referral to the manual of the test which was administered (7; 8; 66; 71; 72). A second method is in terms of grade equivalence (6; 7; 8). A third way to gain a score which may be converted to the stanine range is the learning quotient, L Q (33:19f). The learning quotient may be compared with the M A when using the Pinneau Revised Tables, which are in the manual for the Stanford-Binet (66).

CHAPTER III

A DESCRIPTION OF THE TYPICAL ASSESSMENT PROCESS

Introduction

Some of the general interests in education which were important to the citizens in the early days of our nation are an integral part of our present national life style. There does not appear to be any greater degree of unanimity in terms of specific goals and objectives for education now than there was in the colonial period. The desire for education as expressed by the church leaders of the colonial period was specific. The argument of the political and secular leaders for promoting education was considerably more general and less clearly defined. One present day example of some comparability is seen in the dialogue relative to curriculum per se. Some are convinced that a vocational program is a part of the educational process. Others maintain that vocational programs are training exercises and are, therefore, not educationally oriented. This is but one of the many examples which could be enumerated.

A major unifying factor for education during the colonial period was ostensibly centered on reading. There appear to be two factors of some unanimity of public opinion today regarding the education of our youth: an education for all and an adequacy in that education.

Much of the public responsibility for a program of education is placed with our schools. Responsibility for education cannot be assumed by an institution. In essence, therefore, the responsibility for an adequate educational program for all is placed with the personnel of the school. A climate of expectancy is created with the transference of this responsibility for educational adequacy and tends to result in the exercising of some forms of measurement to ascertain academic performance.

Typical Assessment of Educational Adequacy

The purpose for the evaluation or assessment of academic adequacy is to gain some measurement of academic performance. The measurement of a specific pupil's performance is based upon the norms of the peer group. These peer group norms are based on the achievement earned by the total of the group population. The peer group is based on at least one factor of commonality to form a homogeneous population. The chronological age (CA) or the grade level are two common factors upon which homogeneity is based for the measurement of academic performance.

The typical assessment of academic performance is group oriented. However, there is some variance in group classification and formation. The norm for three basic groups--the individual classroom, the national population, and the building or local district pupils--are generally considered in such an assessment. These three group norms may be used individually or in toto.

The Typical Classroom Measurement

The classroom assessment is the most frequently used method of academic measurement. A considerable degree of latitude is given to the content of such assessment. Evaluative techniques may range from teacher-made tests to the observation of effort and achievement in daily work and in class participation. Teacher-made tests range from short, specific subject-oriented tests--e.g., spelling lessons--to the longer chapter or unit tests. The grading or scoring of these tests is often comparative in nature. A broad range of adequacy in such terms as high, average, and low or of the terms high, satisfactory, and unsatisfactory is usually utilized.

The evaluation of the pupil's efforts in daily task assignments and in general class participation is both comparative and subjective. The unfinished class assignments and the lack of class participation are evaluated as below average performance. The teacher's report on such pupil behavior is often phrased in such terms as "Johnny is not achieving at any satisfactory level in his class work."

A form of identification has been made through a typical form of assessment. However, this identification referred to the person with a possible problem and not to the problem per se.

The Typical System-Wide Assessment

The system-wide assessment of a specific grade level is a common practice in the evaluation of academic adequacy. Such assessments are achieved through the administration of standardized testing instruments. Many of these standardized instruments are subject-oriented and are referred to as achievement tests.

These standardized tests present a specific body of questions which have been administered to randomly selected groups in an effort to gain a representative population for purposes of norming these instruments. The test data gathered from these sample testings are normed for the appropriate grade levels. These norms are then assumed to be representative and are considered to be a form of national norm for the peer group based on grade level as the factor of homogeneity.

A typical system-wide measurement program involves the administration of a specific standardized test to all pupils within a grade-level area. The qualities of standardization permit the comparison of the varied classes of the system in terms of the norms which have been established by the test publishers through the procedures cited above.

The comparative evaluation of performance can also be extended to the individual pupil within one specific class of the entire school system. The performance of this pupil can also be compared with the national norms for his peer group. E.g., this pupil's vocabulary score may place him in the sixth percentile and within the second stanine range for his grade level.

Again, a form of identification has been made. The specific pupil has been identified as one who is significantly variant from the norms of his peer group in terms of test-measured performance.

This system-wide measurement may also be considered in terms of local system norms. Local system norms also utilize a standardized test instrument, but class and pupil performance are measured on the basis of the peer group performance for this

specific school system. The national norms per se are not involved in the formation of these local school system norms, which are generally viewed with favor and appear to be advantageous for purposes of group and program evaluation.

System-wide measurement has also been effected on a group basis. The data are actually collected for the entire system. The test-measured performance of the specific pupil may be studied but will be seen as it relates to his peers. Again, the identification has been made in terms of finding the nonachieving pupil.

The Typical Individualized Measurement of Educational Adequacy

A typical practice in individualized measurement is for the teacher to refer the pupil who is being consistently identified as functioning below his peers to the school psychologist. A formal referral is made and includes information relative to the parents' knowledge and consent for the assessment. The concerns of the teacher regarding the assumed needs of this pupil are also included. Three typical questions represent the basic concerns of the referring teacher. First, what is the ability level of this pupil? Second, is he eligible for a special education placement? Third, what can I do for him in my class if he is not eligible for a special education class placement?

The question regarding the general abilities or the academic potential factor of the referred pupil will result in the administration of a multi-dimensional psychological test instrument. The two psychological test instruments most commonly used with children of school age are the S-B and the WISC. The administration of these instruments also satisfies the mandated requirement of the Ohio State Department

of Education for the use of multi-dimensional test instruments when placement in classes for the EMR or the L-D is a consideration.

The S-B and the WISC are both based on the use of the primary factors concept for measuring academic performance. The application of the factorial system is observed in the Scale and sub-test format of the WISC. The varied test items of a specific primary factor are distributed within the age equivalency levels on the S-B. Therefore, the test-measured performance of a specific primary factor on the S-B is not as obvious as it is on the sub-test format of the WISC.

These multi-dimensional tests, represented in this study by the WISC, measure the pupil's performance in a number of factorial areas. A composite (I Q) score is then compiled to indicate the test-measured results of this pupil's performance on all of the sub-tests of the Verbal and the Performance Scales. The WISC sub-tests are individually scored, but the I Q score is recorded in terms of the two Scales--Verbal and Performance. A Full Scale score, including all of the sub-test performance of both Scales, is also computed.

These composite scores are an average of the pupil's performance on all the items within the individual sub-tests of the total Scale. An overly simplified rationale is that such a composite score represents the test-measured performance of the general abilities factor. This general abilities factor is then assumed to be representative of the academic performance of this specific pupil.

Again, the pupil is measured in terms of generalization. The measurement of his academic performance is an average of his achievement on eight to twelve sub-tests within the two Scale divisions of the WISC. The pupil's performance on any

one specific sub-test factorial area per se is not observable in the composite score of the Scale.

Summary and Conclusion Relative to the Typical Measurement of Educational Adequacy

The typical measurements of pupil performance at the three levels named in the preceding discussion--classroom, system-wide, and individual--are administered for the major purpose of identification. The classroom measurement, as cited above, is based on both subjective and objective data. The subjective data are related to behavior and attention in class and to class participation. The objective data are related to task-oriented activities, which include seat work assignments and written exercises.

Profit from this process of classroom measurement is gained from its use in fostering further assessment of the pupil. The data acquired are not definitive either in terms of the areas of weak performance or in suggested causative factors. Identification is limited to the recognition of the pupil's comparative underachievement in this measured academic performance.

The typical system-wide measurement of pupil performance is objective. The tasks and directions of these tests are standardized and consistent for all classes and for all pupils. The performance of each pupil is recorded on the class record chart and is included in the class average. This test-measured performance is concrete, measurable, and visible. The subject areas on achievement tests are recorded in terms of the pupil's performance and are scored in terms of peer group norms.

The data from these system-wide tests are somewhat more definitive than are the classroom measurements. Information presented by the system-wide tests is in terms of the pupil's performance within the varied task areas of the test instrument. These varied tasks or factorial areas are recorded as separate entities as test-measured scores. These scores include the performance of an area (e.g., vocabulary or arithmetic computation) but do not identify any causative factors of possible weakness.

Identification is no more specific in the system-wide testing than in the classroom assessment. Again, measurement is in comparative terms. The pupil is seen as underachieving when his below-average performance is compared to the performance of his peers. The typical system-wide measurement again identifies the person who is variant from his peers in academic performance. The person, and not a possible problem, is identified.

The typical individual test, e.g., the WISC, measures the pupil's performance in a number of the primary task areas. The tasks of the WISC are selective and contain general tasks as well as academic, subject-related tasks. A broad scope of both verbal and performance tasks are administered. The test results, although based on peer norms, are assumed to be personal and individual in their identification and interpretation.

However, the concept of group comparison is still encountered. This group concept is actually observed in two different forms. The first is through the use of the composite Scale scores of the WISC. The pupil is compared to his peers in reference to the peer group norms. Secondly, the composite score groups all of the tasks of the

Verbal or the Performance Scale for a general abilities score. This general abilities score is a statistical entity representative of an average for the performance of the entire Scale. Identification is again considered within the group concept.

Weaknesses Within the Typical Measurement of Educational Adequacy

The typical measurement of educational adequacy is weak in terms of specificity. Typical measurements are group-oriented. This group orientation is observed with the informal test in the classroom, the achievement testing of a school system, and the individual test. Performance as measured for composite scores was considered in broad areas of task assignment. This broad scope application is also encountered in the individual testing through the use of the Scale or composite scores. This broad application for identification and interpretation is a major weakness in the typical program for the individual measurement of educational adequacy.

Specific weaknesses include the following:

1. The primary factors are measured on the WISC, but their individually measured performance is not visible in the composite score

2. The areas of variance between the individual factorial areas are not visible in the composite score

3. The assumed value of the factorial tasks of the WISC are lost, in terms of identification and interpretation, through the singular use of the Scale or the composite scores

The Summarized Factorial Assessment Outline is presented in an attempt to mitigate the weaknesses of the typical program in the measurement of educational adequacy.

CHAPTER IV

SUMMARIZED FACTORIAL ASSESSMENT OUTLINE

Assessment Procedures

The low academic achievement of a pupil is one of the major reasons for referrals to the psychologist by the school staff. The observation and informal assessment of the teacher is the basis for her referral for assistance. This referral is a formal request for a thorough assessment of the pupil's performance.

The Summarized Factorial Assessment Outline is a paradigm for the total assessment of the academic performance of a pupil. This paradigm allows for the identification of specific areas of integrities and deficits--comparative strengths and weaknesses--within the varied task areas of the assessment instruments. The interpretative and prescriptive processes are based upon these test data. The structural outline of the SFAO is presented below.

The classificatory structure of the SFAO is based upon the symbol systems and their functions within the varied modalities. The verbal and nonverbal symbols comprise the foundation upon which the classifying, organizing, reporting, and total communicating of all information and knowledge is based. Therefore, the classificatory structure of this paradigm appears to be applicable for the total assessment of academic performance.

The receptive and expressive functions are utilized for making these symbol systems operative. The receptive function precedes the expressive function and receives, analyzes, interprets, records, and stores all forms of information and knowledge. The receptive function is utilized with both of the symbol systems and in the varied modalities.

The expressive function is the organizing, reporting, and communicating of the fruition of man's thought processes. This expressive function is one of transducing the thoughts and ideas of the person into a symbol system pattern which can be comprehended by other persons. This expressive function may be utilized with both symbol systems. Oral and agraphic expressions are also involved. E. g., the task expectation of the Vocabulary sub-test of the WISC requires oral expression, and the Spelling sub-test of the Wide Range Achievement Test (WRAT) requires an agraphic expressive function for task completion.

The varied modalities--auditory, visual, motor,and tactile--are involved. The definition for the auditory modality as used in this study is extended beyond the hearing process per se. Oral expressive tasks are included as a part of this auditory modality. The structuring of word combinations is referred to as a process of auditory association. The receptive and the expressive functions are both operative within this auditory modality.

The visual modality does not appear to be in need of further definition. However, the factors of visual acuity and of visual perception will be presented. Visual acuity is concerned primarily with the clarity of vision and the ability to see without corrective lenses.

Visual perception is concerned with form, sequence, association, and organization of verbal and nonverbal symbols. The receptive and the expressive functions are both utilized with the perception factor of the visual modality. The tasks of the Raven Progressive Matrices (Raven) are one example of a receptive function with nonverbal symbols. The tasks of the Bender-Gestalt test are examples of the expressive function with nonverbal symbols. Some of the tasks of visual perception are also included in the motor modality. The tasks of the Bender Gestalt are examples of such a duplication of modalities in their utilization of hand-eye coordination activities.

The SFAO is categorically arranged and contains a sequential and progressive series of steps in the total process of assessment. These steps are presented within their respective classificatory divisions as well as in their sequential order.

Assessment Processes

Step 1. Behavioral observation

An objective behavioral study is the initial step of this total assessment process. A general view of the behavioral patterns of the pupil is desired. Two general areas of the pupil's behavior--personal responsibility and personal involvement and the task orientation or task responsibility--are of primary concern. This behavioral observation is often the first personal contact the clinician has with the pupil.

The behavioral study is effected with the use of the BOC, Appendix B. The behaviors may be calculated as percentages. The score should be presented in terms of approximate ratios. A comparative indication of behavior is desired in preference to specific arithmetic entities.

Step 2. Pre-test evaluation

The pre-test evaluation is utilized for several specific reasons. The first reason is to present test instruments which are relatively nonthreatening in format and content; secondly, to comprise a battery of instruments in which the receptive and expressive functions of both the verbal and nonverbal symbol systems are included. The third purpose includes the elements of prediction and verification. The data from this battery of tests may be indicators of specific areas of integrity or deficit as noted in the measured performance of these individual tests and sub-tests. The verification factor may be most adequately utilized in the latter stages of the identification process and in the process of interpretation. The varied emphases of these instruments appear to be of special significance in the interpretative phase of a total academic assessment.

The pre-test battery is comprised of the following instruments for elementary school pupils. The Peabody Picture Vocabulary Test (PPVT) is administered as the receptive function test of the verbal symbols. The expressive function of the verbal system is often measured with the Wide Range Achievement Test. The Raven Progressive Matrices is utilized for the receptive function and the Bender-Gestalt for the expressive function of the nonverbal symbols.

One area of the verification factor is also satisfied through the use of the PPVT. The receptive function of the verbal symbol system is represented by the PPVT. The expressive function of the verbal symbol system and the receptive and expressive functions of the nonverbal symbol system are represented by other instruments comparable to the PPVT in the receptive function of the verbal symbol system.

Step 3. Multi-dimensional evaluation

The WISC will be utilized in illustrating the use of the multi-dimensional test instrument. A mandate by the Ohio State Department of Education requires that a multi-dimensional assessment be administered prior to the placement of a pupil in a special education class. The Scale scores are prescribed in the mandated requirements. The Scale scores of the WISC represent a composite, or mean, score of the pupil's performance for all of the sub-tests of either WISC Scale. This Scale I Q score is the measure referred to in the 50 to 80 I Q range of these composite scores for EMR placement. The L-D placement score is an I Q of 80 and above.

The sub-tests of the WISC are based on some phase of the primary factor concept. The Vocabulary sub-test of the WISC is an example of a verbal symbol instrument. The classificatory concept of the SFAO paradigm is comparable to the primary factor concept.

The major variation between the classificatory concept of the SFAO and the primary factor concept is in degree. The primary factor concept is concerned with individual factors, e.g., verbal and spatial. The classificatory concept of the SFAO is based on a broader scope and includes the function and modality factors.

Therefore, the scores of the sub-tests of the WISC are utilized to measure the factor involvement of each specific sub-test. For instance, the Vocabulary sub-test of the WISC is a verbal symbol test which requires an oral expressive response from the pupil for adequate task fulfillment.

Assessment of Performance

Step 4. Integrities

An adequacy in performance is assumed when the test-measured performance is in or above the average range for the pupil's peer group norms. This adequacy is referred to in this study as an integrity. Therefore, an integrity refers to the factor area in which the pupil's test-measured performance is in or above the average range for his homogeneous group. The chronological age factor is a common base for establishing homogeneity. E. g., a score in or above the average range for the Vocabulary sub-test of the WISC would assume an integrity for the verbal symbols in the expressive function in the auditory modality

Step 5. Deficits

The deficit is the antithesis of the integrity and is determined on the basis of variance. One factor is the variance of the pupil's performance in relation to his peer group norms. The other basis of variance is related to the differences noted in the various sub-test or factorial areas on which the pupil is evaluated.

The deficit per se is then based on the significance of the test-measured variance. Generally, a variance of one standard deviation, or of two stanine ranges, is considered to be significant. The degree of significance is increased with an enlargement in the variance between either the peer group norms or between the factorial areas measured on the tests administered.

Emphasis is placed on the measurement of performance and on the comparison of these test-measured data. Therefore, a consistent basis of measurement must be adopted.

Measurements for Performance

Step 6. Scale scores on the WISC

The Scale scores of the WISC are determined in keeping with the standardized method provided in the test manual. These test data are then recorded on the face of the WISC record form.

Step 7. Conversion of Scale scores to the stanine range

There are several advantages in converting the Scale and sub-test scores to a stanine range. First, the stanine range presents a divisional area of variance within acceptable limits of comparability. These limits of acceptability involve variations which are not statistically significant. Secondly, a comparative study of test performance is enhanced when a range of acceptable proportions replaces a myriad of individual scores such as the scaled scores.

The tables on Appendix B and in the WISC manual are aids in the determination of the stanine range. The percentile equivalency table in the WISC manual may also be of some assistance.

Identification of Test Data on the Statistical Summarized Profile Chart

The Summarized Statistical Profile Chart (SSPC) is presented as a vehicle for the recording and comparison of these test-measured data. The SSPC is prepared for recording the pupil's test-measured performance on each sub-test area as well as for the composite or Scale scores. The SSPC may also be adapted for the recording of data for any test through the proper labeling of the sub-test (vertical) columns of the profile.

As noted on Table 1, the left column contains a vertical listing of the stanine range in descending order of attainment. There is also a classification

SUMMARIZED STATISTICAL PROFILE CHART

Joe
name

date

WISC

	VERBAL SCALE								PERFORMANCE SCALE						
STANINES	INFORMATION	COMPREHENSION	ARITHMETIC	SIMILARITIES	VOCABULARY	DIGIT SPAN	COMPOSITE		PICTURE COMPLE	PICTURE ARRANGE	BLOCK DESIGN	OBJECT ASSEMBLY	CODING	COMPOSITE	FULL SCALE
9											•	•		•	
8									•	•					
7															
6															•
5													•		
4		•		•											
3			•												
2						•	•								
1	•				•										

Table 1

quality to the stanine range. Stanines four through six embrace the middle one-half or average range. Stanines one through three contain the lower one-quarter, and stanines seven through nine represent the top one-quarter of the peer group population.

Step 8. Interpersonal appraisal

The interpersonal appraisal is effected through the comparison of the test-measured performance of the pupil in relation to the norms of his peer group. The pupil's test-measured data are recorded in the appropriate stanine ranges of the SSPC. Table 1 preents one pupil's profile of WISC data.

Table 1 is appraised by viewing the profiled data in terms of the three classified stanine groups--the top one-quarter, the middle one-half, and the lower one-quarter of the peer group population. By these criteria, Joe's test data in Table 1 records a Verbal Scale deficit by being in the second stanine and a Performance Scale integrity by being in the ninth stanine on the bases of composite Scale scores. The Verbal Scale area is a deficit by being significantly below the average range in the second stanine.

Step 9. Intrapersonal appraisal

The intrapersonal appraisal is made from the same profile and the same data (Table 1) used for an interpersonal comparison. This intrapersonal comparison is between the varied factorial areas within the bounds of Joe's test performance. E. g., a significant degree of variance is noted between Joe's Verbal Scale score in the second stanine and the Performance Scale score in the ninth stanine.

A variation is also noted within each of the two Scales of the WISC. The Coding sub-test in the fifth stanine is significantly below the other Performance Scale scores, which are all in the eighth and ninth stanines. This variance in terms of an intrapersonal comparison is another factor in the establishment of an area of specific deficit.

The Interpretative Process Through the SSPC

Step 10. Interpretation through the interpersonal process

An interpersonal evaluation of the test data of Table 1 indicates that all sub-test areas of the Performance Scale may be defined as integrities. Two of the sub-tests of the Verbal Scale denote areas of integrity. Four of these Verbal Scale sub-tests are deficits by the same interpersonal definition of integrities and deficits.

Step 11. Interpretation through the intrapersonal process

The intrapersonal comparative view of the data of the Performance Scale indicates that one sub-test, Coding, is defined as a deficit. The assumption of Coding as a deficit is due to a variance of three stanines from the other sub-test nearest it on the profile scale. Coding is in the average range by the interpersonal concept of comparison. However, coding is considered to be a comparative deficit on the Performance Scale profile by the intrapersonal concept of comparison.

Attempts to identify the suspected factors of causation as viewed in the assessment process will not be entertained in this discussion.

Summarization and Review of the Data

Step 12. Review of the behavioral study data

The pupil's behavioral chart is reviewed to gain insight regarding his involvement in class activities and his effort in the solution of assigned tasks.

Step 13. Review of the examiner's notes

The notes of the examiner are reviewed to gain the advantage of observations and impressions garnered during the assessment process.

Step 14. Comparing the pupil's performance with the developmental scale

A broad area comparison of test-measured performance with the developmental norms is a well-advised procedure. This comparison may be accomplished through a comparison of the age or grade equivalency of the pupil's performance with the C A or actual level of the pupil.

Step 15. Further diagnostic procedures

A consideration must be given to the need of further diagnostic data than those which may be obtained in the school. Such needs are limited chiefly to the range of needs experienced by school age children. Reasonable and realistic questions regarding pupil needs should be relayed to the parents. These needs may well begin with a referral to the family physician or the child's pediatrician.

Prescription for Remediation

The notation of the referring teachers and the total test data should be given full consideration in the compiling of prescriptive options. The observations and test data received should be discussed with the teacher in view of the most urgent need for remediation. The following steps may be utilized in arriving at the optimal prescription required in the remediation processes.

Step 16. A review of needs and options

A report should be made to the teacher in terms of basic identified needs and probable options.

Step 17. Priorities in prescription

The greatest felt need of the teacher may be the logical entry for remediation. Remediation should be limited to not more than two points of emphasis at one time.

Step 18. The employment of progressive evaluation

Progress in remediation should be carefully observed. Measurable progress in a major deficit often reveals another deficit which was initially less visible. Renegotiation for the remediation of such continuing deficits should be initiated.

CHAPTER V

CASE STUDIES IN THE APPLICATION OF THE SUMMARIZED FACTORIAL ASSESSMENT OUTLINE

Introduction

The case studies presented in this chapter are reported from their initial recognition of academic underachievement through the total assessment process. The assessment process is presented within the rationale of the SFAO, and the case studies are modeled after the structural outline of this new paradigm. These case studies will also be utilized in Chapter VI, where the major functions of the SFAO--identification, interpretation, and prescription--will be described.

The case studies of Johnny, Sondra, and Joe represent three specific pupil performance problems often referred to the school psychologist. The referral of each of these pupils was based on their underachievement in the classroom. There was a general similarity in the symptomatic description presented on the referral form of each of these three pupils.

Case Studies

Johnny

Johnny, a boy six years and six months (6-6) of age, was one of thirty-two children in his first grade class. He was referred by his teacher on the basis of his

weak academic performance in comparison to the norm of his peer group. The teacher's concern may be paraphrased in three generally standard questions. Is Johnny capable of doing first grade work? Is he a possible candidate for placement as an educational mentally retarded pupil? What can I do for him if he remains in my class?

Some examples of Johnny's written assignments were presented by his teacher. These assignments were comprised primarily of short, descriptive stories containing several five or six-word sentences. The worksheets revealed both quantitative and qualitative inadequacies. The assignments were not completed on any of the papers shown by the teacher. The quality was also poor in terms of writing and in the order and sequence of the work. Random words were written with little regard to their order in the original sentence structure.

The examiner observed Johnny in the classroom for an extended period of time. Johnny's group met with the teacher for the presentation of a short story which had been written on a ruled piece of newsprint. Several new words were identified and presented by the teacher. These new words were explained to the pupils and then pronounced as a group activity. The sentences were then read as a group activity and repeated several times.

Sheets of paper, which were ruled and proportioned in size to the newsprint used by the teacher, were then given to the pupils. An assignment was made for the pupils to copy the sentences from the newsprint. The teacher observed the pupils briefly and then began to work with a small reading group in another part of the classroom.

An objective behavioral study was completed on the Behavioral Observation Chart, Appendix B. This study of Johnny's behavior was done on the basis of observing his appropriate and inappropriate behavior. Appropriate behavior was equated to the pupil's meaningful involvement in the task assignment at that specific time. Inappropriate behaviors included inattention, disturbance of others, and other activities than those which were assigned. The result of this behavioral study revealed a 7:3 ratio of inappropriate to appropriate behaviors.

A brief conference was held with the teacher. She was instructed to present simple directions to Johnny duplicating those which were given to the entire class relative to the seat work assignment. Two additional statements were to be added in her talk with Johnny. The first statement was relative to her expectation that he finish the task. The second statement was to the effect that she knew he could do a good job on this lesson. The teacher then returned to working with a small group of pupils.

Another observational study was completed for Johnny. The inappropriate to appropriate ratio on this study was 4:7. Johnny worked quite steadily on his assignment and upon completion placed his work on the teacher's desk as the class had been instructed. This work, which was graded at a later date, was reported to be above average in both quantitative and qualitative considerations.

The WRAT was administered as the pre-evaluation instrument. The data of the WRAT, profiled on Table 2, were quite variant. The oral usage experiment on the WRAT was scored in the ninth stanine. The oral usage experiment was administered by the clinician, who presented the words of the Reading sub-test of the WRAT as the

stimulus. The pupil was requested to respond by using the stimulus word in a sentence, giving a definition of the word, or both. The score of the arithmetic sub-test of the

SUMMARIZED STATISTICAL PROFILE CHART

Johnny
name

date

stanines	•Stanford-Binet Composite	Vocabulary	Visual-Motor	Recall	Abstract Ideation				W Oral Usage	R Reading	A Spelling	T Arithmetic			
9		•			•				•						
8															
7	•														
6												•			
5															
4															
3										•	•				
2															
1			•	•											

• Specific item tests and/or sub-tests other than multi-dimensional psychological tests may be entered in these vertical columns.

Table 2

WRAT was in an average range, and the reading and spelling results were below average on a grade equivalency basis.

The Stanford-Binet was administered as the multi-dimensional test instrument. The composite score was in the seventh stanine (above average). The composite score and the stanine range estimates of the factorial areas of the S-B are also profiled on Table 2. A considerable variance in performance is noted in Table 2. A stanine-range placement was established for four factorial areas of the S-B. These factorial data will be utilized in the processes of identification and interpretation.

Sondra

Sondra's C A was 7-11 when she was referred by her teacher because of her poor academic achievement in the classroom. Two major concerns were expressed by the teacher on her referral form for Sondra. The first concern was in reference to Sondra's capability to function at her grade level. The second concern was relative to Sondra's qualification for placement in an EMR class.

Sondra was observed in her class, and an objective behavioral study was made. No significant ratio of inappropriate behavior was observed. The clinician's inquiry to the teacher regarding Sondra's total behavior pattern elicited no unfavorable response. Sondra's behavior pattern appeared to be generally adequate and satisfactory in all areas. Therefore, the behavioral factor was considered to be an integrity.

The Peabody Picture Vocabulary Test and the Pictorial Test of Intelligence (PTI) were administered as the pre-evaluation test instruments. The PPVT is a receptive function test of the verbal symbol system. The PTI is also a receptive function test, but it contains a broader scope of stimulus objects. These stimulus objects are comprised of analogies, numbers, geometric form, and proportion. Achievement on the

PPVT was scored in the low fifth stanine. The PTI was scored in the low third stanine. These test scores are profiled on Table 3.

SUMMARIZED STATISTICAL PROFILE CHART

Sondra
name

date

stanines	•W Oral Usage	R Read-ing	A Spell-ing	T Arith-metic			PTI	PPVT		S-B Composite	Vocabu-lary				
9															
8															
7															
6															
5								•							
4															
3							•								
2	•		•												
1		•		•						•	•				

* Specific item tests and/or sub-tests other than multi-dimensional psychological tests may be entered in these vertical columns.

Table 3

The Stanford-Binet was administered as the multi-dimensional test instrument. A composite score of 65 on the S-B placed Sondra in the first stanine. The verbal factor area of the S-B, represented by the vocabulary section, was also scored in the

first stanine. These scores are profiled on Table 3.

A summary of the test data in Table 3 shows that a variance exists between scores of each test--the PPVT, PTI, and S-B. The variance between each test score is slightly significant. The score of the S-B, as a multi-dimensional test, is acceptable for qualifying Sondra for placement in an EMR class.

Sondra was seen again at age 10-11. The teacher's report of Sondra's behavior, as well as the observational behavior study, were both considered to be an area of integrity.

The WRAT was administered to Sondra as an academic assessment instrument. The sub-tests of the WRAT are academically oriented. The four factorial areas on the WRAT are scored in the first and in the second stanines. A broad comparison may be assumed between the measured performance of the WRAT and of the PPVT and the PTI, which were administered at age 7-10. This comparison is based on the broad classification of both symbol systems as they are related to an academic application. The sub-test scores of the WRAT may also be compared with the scores of the S-B. The scores of the WRAT are also profiled on Table 3.

A cursory review of Table 3 reveals that the scores of the WRAT and those of the S-B are comparatively similar. There is no significant degree of variance in the test-measured performance of the multi-dimensional psychological instrument, the S-B, and the academically oriented test, the WRAT. Sondra's test scores reveal no significant variance between the varied factorial areas.

Joe

Joe's first referral was made when he was 10 years old. His teacher referred him because he was experiencing exceptional problems in reading. The queries from the teacher were in reference to Joe's potential in academic work within the regular classroom and relative to his eligibility for an EMR placement.

The assessment was initiated with an observational behavior study and a request to the teacher for a report on Joe's behavior. No behavioral problems of any significance were noted from either the observational study or the teacher's report. Joe's behavior was, therefore, considered to be an area of integrity.

The WISC was administered to Joe because of the inquiry regarding a possible EMR placement. Achievement as measured by the Scale scores of the WISC was quite varient. There was a seven-stanine differential between the Verbal Scale and the Performance Scale scores. This variance of seven stanines is equivalent to more than three measures of standard deviation and is statistically significant.

There was also a considerable degree of variance between the sub-test scores within both the Verbal and the Performance Scales. All of these sub-test and Scale scores are profiled on Table 4. Only one sub-test of the Verbal Scale, Digit Span, was in the same (second) stanine with the Scale score. There was a significant degree of variance between the test-measured performance of the Comprehension, Similarity, and Arithmetic sub-test scores and those of the Information and Vocabulary sub-tests.

The degree of variance on the Performance Scale was as great as that observed on the Verbal Scale, but only one sub-test, Coding was variant. The Coding sub-test

was variant from the test-measured performance for the total Scale and from the other four sub-tests of the Performance Scale.

SUMMARIZED STATISTICAL PROFILE CHART

Joe
name _____ Date _____

WISC

	VERBAL SCALE									PERFORMANCE SCALE						
STANINES	INFORMATION	COMPREHENSION	ARITHMETIC	SIMILARITIES	VOCABULARY	DIGIT SPAN	COMPOSITE		PICTURE COMPLE	PICTURE ARRANGE	BLOCK DESIGN	OBJECT ASSEMBLY	CODING	COMPOSITE	FULL SCALE
9											•	•		•	
8									•	•					
7															
6															•
5													•		
4		•		•											
3			•												
2						•	•								
1	•				•										

Table 4

A brief summary of Table 4 reveals several specific and significant test-measured variations. There is a significant variance between the Verbal Scale score in the second stanine and the Performance Scale score in the ninth stanine. This variance is in excess of three measures of standard deviation.

The Full Scale score of the WISC in the sixth stanine was significantly variant from both the Verbal Scale and the Performance Scale scores.

Joe was in the Junior High School when he was again referred for an academic assessment. He was 15 years old at this time and was referred by his guidance counselor. The paraphrased questions again related to Joe's potential and to his eligibility for a special class placement. The teacher's reports revealed that he was experiencing a considerable degree of difficulty in mathematics and English. There appeared to be less difficulty in the science and social science classes. The teacher's report showed that Joe's art work was considered to be in the average range. The reports of Joe's performance in his various classes were not highly consistent.

The behavioral study was effected through some observational study and from reviewing the reports from the teachers. These teacher reports concerning Joe's behavior patterns were unanimous in their positive appraisal of Joe's behavior, including his efforts in task assignments. Therefore, behavior was considered to be an area of integrity.

The Wechsler-Bellevue II (W-B II) was administered as the multi-dimensional assessment instrument. Achievement on the W-B II as measured by the Scale scores was quite variant. A significant degree of variance was noted between the Verbal Scale score of 85 in the third stanine and of the Performance Scale score of 115 in the seventh stanine. The scores of the W-B II are profiled on Table 5. The scores of the Performance Scale test indicate a test-measured performance in an above-average range. This above-average Scale score indicates that the factorial areas within the

Performance Scale as a unit are considered to be areas of academic integrity. A significant degree of variance is noted in the test-measured performance of the sub-

SUMMARIZED STATISTICAL PROFILE CHART

Joe
name

date

WECHSLER-BELLEVUE II

	VERBAL SCALE								PERFORMANCE SCALE							
STANINES	INFORMATION	COMPREHENSION	ARITHMETIC	SIMILARITIES	VOCABULARY	DIGIT SPAN	COMPOSITE		PICTURE COMPLE	PICTURE ARRANGE	BLOCK DESIGN	OBJECT ASSEMBLY	CODING	COMPOSITE	FULL SCALE
9											•				
8												•			
7														•	
6													•		
5		•							•	•					•
4				•	•										
3							•								
2						•									
1	•		•												

Table 5

tests of the Performance Scale. However, none of these sub-test scores are below the average range for the norms of Joe's peer group.

The composite score of the Verbal Scale is in a below-average range. This composite score for the Verbal Scale is below the Performance Scale score to a significant degree and is also below the average on the norms of Joe's peer group.

A concise summation of the data from both the WISC and the W-B II show that Joe's problem cannot be defined as a lack of ability or potential. Joe will not qualify for an EMR placement. The degree of variance between the Verbal Scale and the Performance Scale scores suggest that some specific academic problems are being experienced by Joe. Such problems cannot, however, be identified solely from the Scale scores of the WISC and the W-B II.

After the case studies for Johnny, Sondra, and Joe have been presented and the test data are recorded and profiled, many questions included in the paraphrased questions raised by the teachers on the referrals are not yet answered. What is the pupil's potential? What can be done for this pupil in the classroom? The three diagnostically-oriented methodologies of the SFAO paradigm--identification, interpretation, and prescription for remediation--are presented in the following chapter as possible aids in an attempt to provide more adequate answers to the questions teachers are asking.

CHAPTER VI

THE APPLICATION OF THE SUMMARIZED FACTORIAL ASSESSMENT OUTLINE

The data of the total assessment program for Johnny, Sondra, and Joe was reported in Chapter V. The paraphrased questions on the referrals pertaining to an EMR placement were answered by the scores earned on the multi-dimensional test instruments administered to the pupils. The questions regarding specific problems and techniques the teacher may use to aid these pupils are at this point unanswered.

The identification process has been partially fulfilled through the determination of the eligibility of the pupil for an EMR placement. However, identification relative to academic strengths and weaknesses and to specific problem areas in learning has not yet been accomplished. This chapter deals with these unanswered questions regarding identification. The data available from the studies reported in Chapter V will be utilized in this identification process. The interpretation of these data and some prescription for remediation will also be presented.

Identification

Identification is considered in broad definitional and comparative terms. The problem areas identified by test-measured performance will be referred to primarily in the broad classificatory areas of the functions and the symbol systems which are involved. Some reference, where applicable, will be made to the modalities which

are affected. Each case study is identified and presented as a separate entity.

Johnny

A review of Johnny's behavioral study ratio of 7:3 of inappropriate to appropriate behaviors suggests that his behavioral patterns are not conducive to optimal academic performance. The 4:7 ratio of inappropriate behaviors to appropriate behaviors on the study following teacher intervention shows that intervention by the teacher was of some probable effect in changing the behavior pattern. The variance in the two ratios cited above is significant. Therefore, the behavior observed on the first study cited may be identified as an area of comparative deficit. This deficit is based on comparative rather than any statistical standards.

The Wide Range Achievement Test was administered to Johnny as the pre-evaluation instrument. The oral usage experiment and the Arithmetic Sub-test were scored as definite areas of integrity. The Reading and Spelling sub-tests were slightly deficient. The scores for the WRAT are profiled on Table 2.

The Stanford-Binet was administered as the multi-dimensional instrument. Achievement on the S-B, as measured by the composite score, placed Johnny in an above-average range in the seventh stanine. The composite score for the S-B, as well as the approximate stanine-range score for the factorial areas, is also profiled on Table 2. The vocabulary and the abstract and ideational factor areas were scored in the ninth stanine. The factorial areas involving the visual-motor and recall items were both scored in the first stanine.

A review of Johnny's total assessment in terms of the SFAO paradigm shows a comparative deficit in his behavioral patterns and an integrity in his S-B test-measured performance on academic tasks. The composite score of the S-B and two factorial areas are in the seventh and ninth stanines respectively. The integrity established by these test data are significantly above the limits which would qualify Johnny for an EMR placement.

A concise review of the diagnostic process of identification establishes a general-abilities (academic potential) integrity for Johnny. This potential integrity is established by Johnny's test-measured performance on the S-B.

A review of test data as presented within the concepts of the SFAO reveal some specific areas of deficit. These deficits are displayed graphically on the Summarized Statistical Profile Chart, which is a part of the SFAO paradigm. One area of deficit is observed in behavior. Johnny's ratio of 7:3 for inappropriate to appropriate behavior reveals a pattern which can be considered incompatible with successful academic achievement. A second area of deficit is noted in the visual-motor and recall areas of the S-B. A third area of comparative deficit is noted in the Reading and Spelling sub-tests of the WRAT. These deficits all tend to be academically oriented and can be visible in regular classroom performance.

Sondra

A review of the observational studies of Sondra's behavior shows that no significant degree of inappropriate behaviors were noted. The teacher's reports were all positive relative to Sondra's behavior, including the effort applied to tasks

assigned to her. Behavior is identified as an integrity on the basis of all the information and data.

The scores of the PPVT and of the PTI, the pre-evaluation instruments, are variant to a slightly significant degree. The score for the PPVT is in the low-average range. The score for the test-measured achievement on the PTI is in a below-average range. The score for the PPVT may be considered to be in the lower range of the integrities. The PTI is identified as a deficit when compared to the peer group norms.

The data of the S-B relates to academic abilities (potential) and identifies this area as a deficit in the first stanine. The S-B scores, profiled on Table 3, are for the composite scores and for the vocabulary factor area. Word fluency is included as a vocabulary factor.

The utilization of the structural format of the SFAO reveals a consistent deficit in the varied factorial areas of the S-B. The PTI score in the low third stanine is also recorded as a comparative deficit.

A brief summation of the identification process shows a behavioral integrity may be assumed for Sondra. An academic deficit is seen relative to the test-measured performance of the S-B. A comparative deficit and a slight comparative integrity are seen by the scores of the PTI and the PPVT respectively. The consideration of the variation in test-measured performance on the above instruments is a matter for the interpretative process of the SFAO paradigm.

Joe

A review of Joe's records shows behavior to be an area of integrity. No negative behavioral reports were received from the teaching staff. The observational behavior study was virtually void of inappropriate behaviors.

A significant degree of variation is shown between the test-measured performance of the Verbal and the Performance Scales of the WISC. The Verbal Scale is classified as a deficit. The Performance Scale is classified as an area of integrity. These Scales are identified as areas of deficit and integrity on the basis of the general abilities factor represented by the Scale scores.

A review of the data of Table 4 shows that a significant degree of intrascale variance is recorded on both Scales. Achievement on the Comprehension and the Similarities sub-tests of the Verbal Scale is recorded as a comparative strength. These sub-test scores are in the fourth stanine, the low average range of Joe's peer group (an interpersonal comparison). These sub-tests reveal strengths when they are compared with the test-measured performance gained on the Information and Vocabulary sub-tests (an intrapersonal comparison).

The data of Table 4 also reveal an intrascale variation in the sub-test scores of the Performance Scale. Joe's test-measured achievement on the Coding sub-test is deficient when an intrapersonal comparison of these data is made. However, the Coding sub-test score is not identified as a deficit in terms of the interpersonal comparison.

The Scale scores of the WISC show that Joe will not qualify for an EMR class placement. The below-average score of the Verbal Scale is in the second

stanine. The score of this Scale is below 80 I Q. However, the Full Scale and the Performance Scale scores are in the high-average and above-average ranges respectively.

The W-B II test data profiled in Table 5 show a significant degree of variance between the scores of the Verbal and the Performance Scales. The Verbal Scale score in the third stanine is identified as a deficit by both the interpersonal and the intrapersonal concepts for identification.

The Performance Scale is considered an area of integrity by both interpersonal and intrapersonal comparison. There are a number of intrascale variations noted on the Performance Scale. The scores on the Picture Completion and the Picture Arrangement sub-tests are negatively variant from the Performance Scale score to a slightly significant degree. The Block Assembly sub-test is above the Performance Scale score to a significant degree. However, none of the sub-tests of the Performance Scale are identified as areas of deficit by the interpersonal concept of evaluation.

A review of Joe's test data shows that he will not qualify for an EMR placement because of the high scores earned on the Performance Scale tasks on both the WISC and the W-B II.

The utilization of the SFAO has been of aid in identifying specific areas of integrity and deficit. These integrities and deficits were noted by both the interpersonal and the intrapersonal methods of comparison. The BOC presents these data in a form which is consistent and reliable and also graphically visible.

The assessment data for Johnny, Sondra, and Joe have been identified relative to the concept of adequacy, integrities, and deficits. The data will now be considered through the interpretative process.

Interpretation

The areas of integrity and deficit have been identified. The interpretation of these test data is the next process in the total assessment rationale of the SFAO.

Johnny

Behavior was identified as an area of deficit. This deficit is noted through two specific views. The first view is relative to a behavioral study, yielding a 7:3 ratio of inappropriate to appropriate behaviors. This view can be considered by the interpersonal comparison concept. Interpersonal comparison is applicable because a group norm is used as the criterion for the measurement of behavior.

The second view is seen in the improvement of observed behavior following intervention by the teacher. The 4:7 ratio of inappropriate to appropriate behavior following intervention by the teacher is significantly higher in appropriate behavior than obtained in the ratio of the first study cited. The behavioral study following intervention by the teacher may in part be compared to the intrapersonal concept of interpretation. This intrapersonal concept is applied because Johnny's own personal activity furnishes the total criteria for the measurement of his behavior in both studies.

The clinician's notes on the BOC show that many of Johnny's inappropriate behaviors were due to a lack of task orientation. He was either doing something other than the assigned task, or he was not actively involved in any task. This latter behavior of non-involvement was frequently observed.

Johnny's academic potential is identified as an area of integrity. An interpretation of these data, noted on Table 2, indicates two areas of deficit on both the

S-B and the WRAT. The two deficits on the S-B are the factorial areas of visual-motor activities and recall. A review of the clinician's notes shows that Johnny appeared to be weak in the areas of basic academic process. E. g., the clinician felt Johnny missed the Maze item at age level VI of the S-B because he did not understand the term, the shortest way. Other weakness in process were noted in nonverbal symbol tasks throughout the assessment procedure. Performance on the recall factors may have been affected by the process factor. There may be other factors which at this point are nonspecific.

The general area of directionality may be involved in the visual-motor tasks. Johnny's present stage of development does not appear to be sufficient to yield a definitive answer.

Two sub-test areas on the WRAT, Reading and Spelling, were also identified as areas of deficit. Process was seen to be a definite factor in Johnny's performance on both of these sub-tests. Johnny recognized most of the upper case letters, but a number of the lower case letters were not accurately identified. This lack of word and letter identification is interpreted as a problem in process. Assumption that process is a causative factor is based on the ninth-stanine performance for the abstraction and the ideation factors on the S-B.

An interpretative summary of Johnny's performance notes two areas of deficit at this time. The behavioral deficit is obvious. The deficit in process is observable but less easily defined at this stage in Johnny's development.

Sondra

Behavior was identified as an integrity; therefore, no interpretation is necessary.

There are variations in the test scores which require interpretation. A significant degree of variance is noted between the scores of the PPVT and the PTI. The test-measured performance on the PPVT is above that of the PTI to a slightly significant degree. The PTI is scored at a level which is significantly higher than the composite score of the S-B.

The PPVT is a receptive function test in the verbal symbol system. Credit on the PPVT can be gained by merely pointing to the correct item of the four graphically depicted responses. Responses are selected to match the stimulus word pronounced by the clinician. The stimulus words, especially at the seven to eight-year level, are common in the life experience for most children.

The stimulus for the PTI is presented in the same general pattern as for the PPVT. The response for the PTI can be made without oral communication in a manner similar to the PPVT response. However, the PTI presents a broader range of problems than is given on the PPVT. Analogies, numbers, geometric form, and proportions are included in the task items on the PTI. This broadened range of tasks presents items which may not be within the life experience of seven-year-old children. Therefore, a higher expectancy level can be assumed for the PTI than for the PPVT.

The stimulus word for the S-B is presented in much the same manner as for the PPVT and the PTI. However, the response for the S-B must be made by oral communication. There are also some qualifications which must be included in the

verbal response. E. g., the question "What is Mars?" must include the concepts of both mass and position (a planetary body in space) in the response. Therefore, the vocabulary factor of the S-B is at a higher task expectancy level than either the PPVT or the PTI. The variance between the test scores of the PPVT, the PTI,and the vocabulary factor of the S-B may be explained, at least in part, on the basis of the level of task difficulty.

The test data of the WRAT and the S-B show a deficit within the interpersonal concept of evaluation. The deficit on the interpersonal level indicates performance which is below the average norm for the peer group.

An intrapersonal comparison shows that no significant variance exists between the varied sub-tests. Therefore, the variance noted in Sondra's test-measured performance is only on an interpersonal level. Her performance is at or below the ten-percent level of her peer group on all of the factorial areas of the S-B and the WRAT.

A review of the total test data shows that Sondra will qualify for an EMR placement. Her performance at this time is in the lower ten percentile of her peer group in all of the factorial areas represented on the test instruments which were administered. These test instruments included the receptive and expressive functions for both the verbal and nonverbal symbol systems.

Joe

The data indicate that Joe's behavior may be assumed to be an integrity. Assumption is based on the reports of the teaching staff and on the results of the behavioral observation studies. Behavioral integrity is established at the time of both referrals: ages 10 and 15.

Test-measured performance on the WISC at age 10 established a Verbal Scale deficit as viewed by interpersonal comparison. The composite score of the Verbal Scale was in the second stanine. This second-stanine-range score placed Joe within the low ten percentile of his peer group.

Comprehension and Similarities were the Verbal Scale sub-tests of comparative strength on an intrascale comparison. However, they are not unqualified integrities because they are in the lowest area of the average range. Therefore, no sub-test of the Verbal Scale of the WISC may be considered as an area of integrity on the basis of Joe's test-measured performance.

The test data of the WISC, Table 4, record all the Performance Scale sub-tests as areas of integrity. All these sub-tests are in or above the average range. Four of the five sub-tests of the Performance Scale were in the top ten percentile of Joe's peer group norms. Coding was below the other four sub-tests to a significant degree.

The general area of directionality was identified as one of Joe's major problems. This problem of directionality appeared to be the most serious in the verbal symbol system tasks at age 10. Difficulties were noted in the identification of some of the lower case letters. E. g., difficulty was experienced in differentiating the b and the d. Reversals were also observed.

Auditory association appeared to be a specific problem at age 10. Many of Joe's responses were word or phrase answers. These answers were not sufficient to earn credit by the criteria of the WISC manual. Auditory association is seen as a part of the total problem of directionality.

Coding was the only sub-test on the Performance Scale in which the directionality problem affected the test-measured performance at the 10-year age level.

The test data of the W-B II at age 15 are profiled on Table 5. The Verbal Scale in the third stanine identifies this as an area of deficit when viewed by the interpersonal comparison. This composite score is in the low quartile of Joe's peer group norms. The Performance Scale score qualifies this Scale as an area of integrity.

Picture Completion and Picture Arrangement in the fifth stanine earned the lowest scores on the Performance Scale. The block design tasks and the Object Assembly sub-test were the areas earning the highest scores.

The major problem noted in Joe's performance on this total assessment was in the area of directionality. Sequence and order and arrangement were two major problems. Order and sequence difficulties were obvious in the digit recall and in the tasks of picture arrangement. The clinician observed a considerable degree of difficulty in the Arithmetic tasks of the Verbal Scale. Joe did not appear to be able to master the transducing task required in solving these problems. An arithmetic task not associated with the W-B II was presented to Joe at a later interview. A left to right orientation in the computation of arithmetic problems caused him a considerable degree of trouble.

A comparative summary of the interpretation of the performance on the WISC and the W-B II indicates a considerable degree of similarity. Problems of directionality were observed on both assessments. The problem of auditory association, although showing some measurable improvement at age 15, may still be considered to be an

area of comparative difficulty. The objective tasks, permitting a trial and error pattern of solution, were the most successful areas of performance on the tasks of both the WISC and the W-B II.

Prescription

Identification and interpretation having been completed, prescription for remediation is now required. Prescription should be associated with the specific areas of identified deficit. The interpretative process should offer information relative to the priorities and options to be selected in prescription.

Johnny

Behavior was identified as Johnny's major area of deficit. Therefore, the prescription for remediation should be behaviorally oriented. Johnny's prescription should be written after a conference with his teacher. The specific terms of the prescription are based on those needs which she views as being the most acute. A general prescription is presented.

The prescription for remediation is limited to no more than two emphases at one time. The initial emphasis should be on personal responsibility and on task orientation or task responsibility. Personal responsibility includes Johnny's acceptance of the class assignments as a personal involvement. The corporate assignment to the entire class is to be accepted as a personal assignment to each class member, including himself.

Task orientation involves Johnny's acceptance of his responsibility to complete the class assignment. The specific terms of the task expectancies are planned

with the teacher. These terms are based on the needs which she views most urgent. E. g., a quantitative emphasis for the task assignment may be the first priority. The qualitative emphasis may be negotiated as Johnny's quantitative responses improve.

The process problems may be improved as a result of increased academic involvement. Any specific areas of weakness noted by the teacher should be dealt with individually. She may use pedagogical techniques to effect improvement if the need suggests such a remedy. She may also make a referral for further assistance. Such additional assistance is on a consultative basis and is provided as the need arises.

Sondra

Sondra's deficit was identified within the area of general abilities as viewed on an interpersonal concept of comparison. The scores of her test-measured performance were consistently within the low ten percentile of her peer group norms. Therefore, she qualified for placement in an EMR class.

A periodic evaluation of Sondra's performance is made on the basis of an achievement assessment. Significant changes in academic achievement are reviewed relative to needed changes in Sondra's academic placement.

Joe

Two prescriptions are considered for Joe. The first prescription is relative to the referral at 10 years of age. The second is pertinent to the referral at age 15.

Joe was identified as a boy experiencing specific learning problems in reading at the time of his first referral. No L-D classes were available at that time. However, a prescriptive recommendation was made. The first recommendation was for a complete

visual examination by a specialist in both visual acuity and in visual perception problems. The second recommendation was for placement in a special reading program. This reading program was individualized and was conducted by a special reading teacher. The clinician received no follow-up relative to the fulfillment of either recommendation.

Joe was again identified as a boy experiencing L-D problems on his referral at age 15. No L-D placement was available at a secondary level. The prescription at age 15 was directed toward specific remediation and toward program planning. Tutorial assistance was prescribed as the technique for remediation.

Planning for the remainder of Joe's educational program was also prescribed. Conferences with Joe revealed his interest in pursuing a vocational program for the major portion of his remaining time in public school. A choice of vocational programs was available to Joe for the next school year. This prescription suggested that Joe meet with his guidance counselor to plan a tentative vocational plan within Joe's major areas of interest. Further involvement by the clinician was available on the basis of referral or request.

CHAPTER VII

SUMMARY AND CONCLUSION

An adequate education for all of our youth appears to be a major goal of the American people. Compulsory school attendance laws have been used to accomplish the inclusion of youth in the educational system. Assessment has been utilized in an attempt to measure the performance of pupils. Informal evaluation is largely empirical and is generally based on the total performance of the pupil. Performance includes participation in class activities, the quantity and quality of academic tasks, and comparison with the norms of classroom peers.

Formal evaluation is effected through the administration of a standardized test instrument. Standardized test instruments have appeared to be of value in making a general estimate of academic potential based on the concept of general abilities. The general abilities value is based on the composite score of a multi-dimensional test battery and has been adequate for an estimate of the pupil's total performance. A typical assessment is viewed in relation to the composite score. This composite score is of little assistance in the diagnosis of specific problems in learning.

The Summarized Factorial Assessment Outline is presented in an effort to obtain a degree of specificity in the total assessment process. An observational study of the pupil's behavior is included in the process. This behavioral study is the clinician's initial contact with the pupil. The emphasis on specifics is extended to

the test instrument per se. This factor of specifics is gained through the utilization of the test-measured data provided by the individual sub-tests of the test instrument. Performance within the varied primary factor areas is represented by these sub-test scores.

The classificatory outline of the SFAO presents a format for the basic educational expectations at both the elementary and the secondary levels. The receptive and the expressive tasks of the symbol systems provide a broad coverage of tasks in the varied academic areas. These functions in the basic symbol systems are fundamental in all areas of coding, recording, and communicating of knowledge and information. The identification of the factorial areas of integrity and of deficit offer a specificity which is not available when a major reliance is placed on the composite score of the total test battery.

The Summarized Statistical Profile Chart permits the test data to be studied by both the interpersonal and the intrapersonal concepts of comparison. This graphic presentation is both viable and visible. The stanine range of the SSPC presents a statistically consistent format for the comparative study of the pupil's measured achievement. The SSPC is versatile and can be used in a number of additional applications. One such application is effecting a longitudinal study of the pupil with specific learning problems. Progress in remediation can be readily observed and measured by such a graphic presentation on the SSPC.

Conclusion

The Summarized Factorial Assessment Outline is presented as a structure which can be used by the clinician with any of the present standardized assessment instruments. No new test per se is either neccessary or recommended at this time.

The introduction of this structural format does not suggest the ultimate in assessment and in the treatment of test data. However, this structural outline is an initial effort to organize the available test data into a consistent format for specificity provided in the factorial areas of the test instruments. It also provides for an increased clarity in the process of identification, interpretation, and prescription for remediation. Many adequate assessment instruments are available. Both single-factored and multi-dimensional tests are represented among these adequate instruments. The total SFAO is adaptable to this broad range of tests. The SSPC can also be used for any of the test data. This total program is believed to be a viable presentation of data which are readily available and which will make assessment more meaningful and of more practical use to the teaching staff.

APPENDIX A

APPENDIX A

A GLOSSARY OF UNIQUE TERMS

Adequacy in performance: a test-measured performance which is in or above the average in terms of peer group norms.

Auditory: a broad definition to include hearing and oral communication.

Deficit: a specific sub-test or factorial area which is scored below the average range of the peer group norms. This definition is based on the interpersonal concept of comparison.

Directionality: a broad area including direction per se, direction and location relative to the self, right to left orientation, and the areas of sequence and order.

Expressive function: the overt expression of the person. This expressive function is observed in oral and graphic communication within the broadest interpretation and is used with both the verbal and the nonverbal symbols.

Input: the receptive function. Input also conveys the idea of an accumulating function relative to experience, information, and knowledge. Input is the process by which the young child accumulates and stores learning and always precedes output (the expressive function).

Integrity: an area of test-measured adequacy in the average or in the above-average range relative to the performance norms of the peer group.

Interpersonal concept of comparison: the process of evaluating the test-measured performance of a pupil relative to the peer group norms. This interpersonal comparison locates the position of the pupil in a statistical continuum, such as a percentile or a stanine range, in terms of his peer group norms.

Interscale: the relation between the sub-tests of two scales, e. g., Verbal and Performance.

Intrapersonal concept of comparison: the evaluating and the comparing of the test-measured results of one pupil's test performance in the varied factorial areas of the test administered. The variation in the factorial or sub-test areas is the major focus of this intrapersonal concept of test performance comparison.

Intrascale: the relation of sub-tests within the same scale, e. g., Verbal or Performance.

Lateral dominance or laterality: the horizontal movement in a right to left orientation pattern.

Motor modality or motor activity: the motor activity or movement or expression of the person. Motor activities include use of the large and small muscles and coordinated movement, such as hand-eye activities.

Multi-dimensional test instruments: the tests comprised of sub-tests or of task-item areas which represent a series of tasks within one factorial area. Thorndike's primary abilities and the sub-tests of instruments such as the WISC, the ITPA, or the WRAT illustrates the multi-dimensional format of tests.

Nonverbal symbols: the numerals and geometric forms in the broadest definition from the straight horizontal line to intricate design.

Oral usage experiment on the WRAT: an exercise in the practical use of a stimulus word taken from the reading sub-test of the WRAT.

Output: the expressive functions preceded by input. Output may be expressed with either the verbal or the nonverbal symbol systems.

Peer group: a group of persons based upon some factor of homogeneity. This homogeneity is most often based upon the chronological age factor, but may also be based upon the age equivalency or the grade equivalency factors.

Process, the factor of: the basic concepts of formal learning as they are progressively developed throughout the child's academic experience.

Receptive function: the input or receiving of the varied forms of the person's experiences. The receptive function is operative in both of the symbol systems and in all of the modalities. The receptive function is the first function utilized by the child in the learning process.

Single-dimensional test instruments: the tests which present only one basic factorial area. The Peabody Picture Vocabulary Test is a verbal symbol test which is basically receptive in its function through the totality of the test administration.

Tactile: a modality which relates to the sense of feel and touch. The tracing of the letters of a word on the chalkboard is an example of a tactile task within the expressive function.

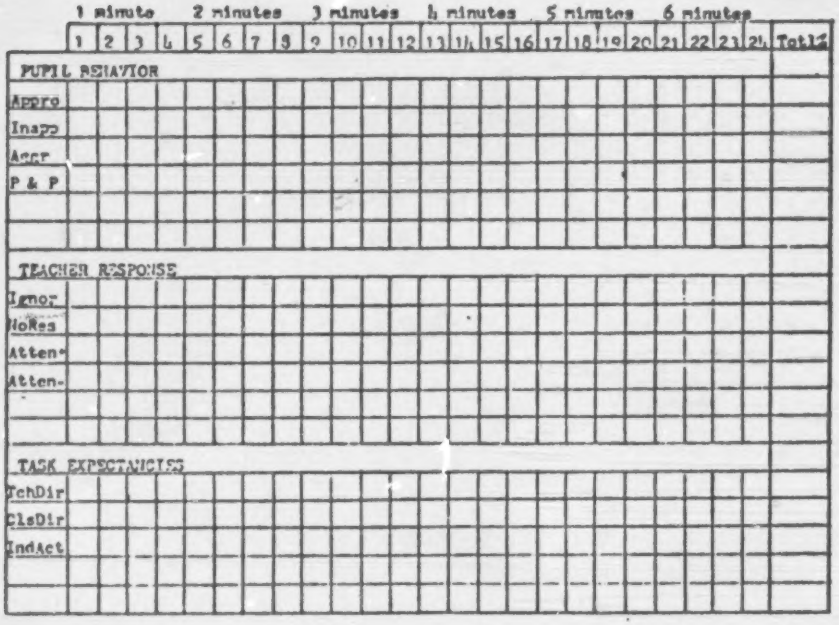
Verbal symbol system: the wide range from individual letters to complex word formations.

Visual modality: the receptive function of the seeing or the viewing experience.

APPENDIX B

BEHAVIORAL OBSERVATION CHART

NAME_____ DATE_____ TIME_____ SCHOOL_____



Behavioral Interaction and Task Expectancy

Pupil Behavior

Appro--appropriate behavior is assumed when the pupil is attentive, is involved in class participation, or is engaged in the assigned tasks.

Inapp--inappropriate behavior such as inattention or being involved in personal nonacademic activities, e. g., playing with a favorite toy.

Aggr--aggressive behavior is some form of forceful behavior

P & P--interference with the person or property of another, e. g., the physical touching of another or disturbance of others, including verbal interference.

Teacher Response

Ignor+--ignoring the behavior as if the teacher were unaware of the action.

NoRes--action by the teacher which informs the pupil that she is aware of the activity, but no direct response is made.

Atten+--a positive response by the teacher in which she conveys acknowledgment and acceptance of the person.

Atten- --a negative response to the pupil by the teacher.

Task Expectancies

TchDir--a presentation of new material or directed class discussion.

ClsDir--small group or committee work.

IndAct--individual activity of the pupil whether it is assigned by the teacher or free-time activity chosen by the pupil.

Observing Behavior

Each of the six minute sections of the BOC is divided into four 15-second segments. The pupil's behavior for the first 5 seconds determines behavior credited for that specific 15-second segment. The marking of each segment is made with a vertical line (|) in the segment box.

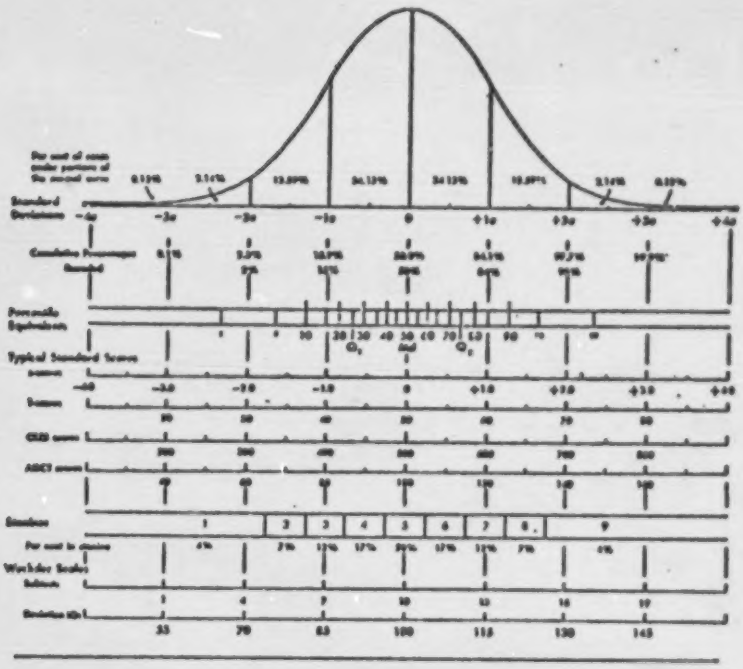
The task expectancy establishes the criteria by which the pupil's behavior is evaluated. The dominant behavior of the first 5 seconds must be credited for each consecutive 15-second segment.

The teacher response should be scored for each segment in which the Ignor, the Atten+ or the Atten- rows are marked. NoRes rows are marked in a continuous fashion and are assumed to continue until another behavior is involved.

The task expectancy is also a continuing factor item. The initial segment is sufficient until the expectancy is changed. This continuing factor in the task expectancy, as well as in the NoRes item above, is used as an efficiency measure.

APPENDIX C

BELL-SHAPED CURVE

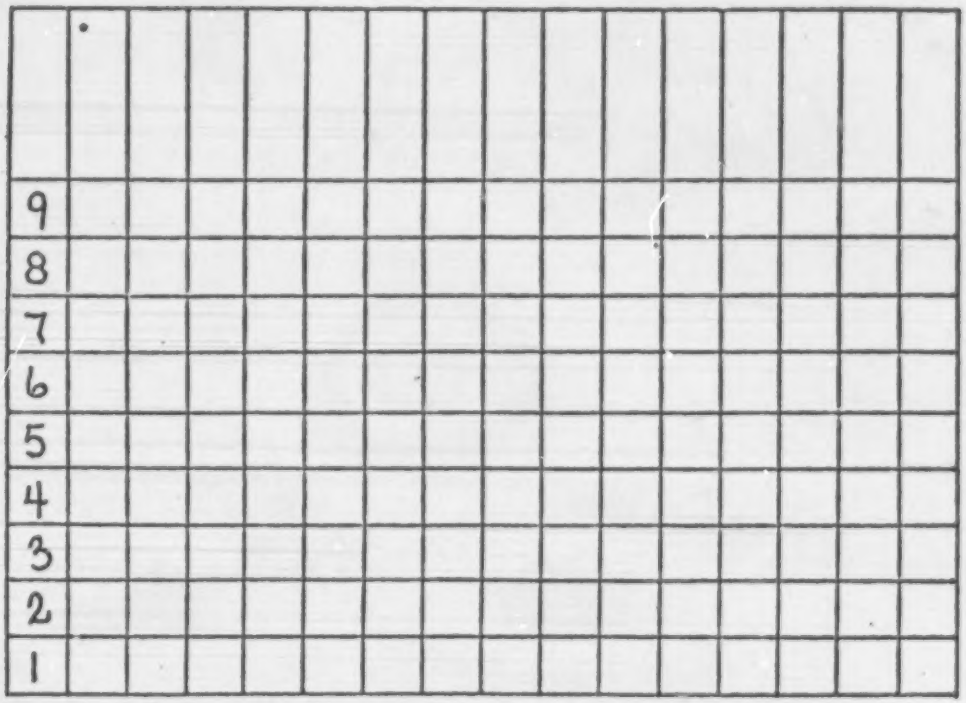


This table is reproduced from the Test Service Bulletin, No. 48, from January, 1955. The Psychological Corporation, N. Y., N. Y.

APPENDIX D

SUMMARIZED STATISTICAL PROFILE CHART

name _____ date _____



* Specific item tests and/or sub-tests other than multi-dimensional psychological tests may be entered in these vertical columns.

The name of the test or sub-test is inserted in the vertical column in the space at the top of the profile (*).

The test-measured score is marked in the appropriate line of the stanine range scale in the left margin. Variance within a stanine range may be approximated.

E. g., a score of percentile 42 may be marked with a dot (•) near the lowest portion of the fifth stanine. A percentile of 50 is marked in the center, and the 59 percentile score is marked at the top of the fifth stanine segment.

APPENDIX E

GRADE-AGE EQUIVALENCY TABLES

Gr \ Mo	0	1	2	3	4	5	6	7	8	9
K	5-6	5-7	5-8	5-9	5-10	5-11	6-0	6-1	6-2	6-3
1	6-6	6-7	6-8	6-9	6-10	6-11	7-0	7-1	7-2	7-3
2	7-6	7-7	7-8	7-9	7-10	7-11	8-0	8-1	8-2	8-3
3	8-6	8-7	8-8	8-9	8-10	8-11	9-0	9-1	9-2	9-3
4	9-6	9-7	9-8	9-9	9-10	9-11	10-0	10-1	10-2	10-3
5	10-6	10-7	10-8	10-9	10-10	10-11	11-0	11-1	11-2	11-3
6	11-6	11-7	11-8	11-9	11-10	11-11	12-0	12-1	12-2	12-3
7	12-6	12-7	12-8	12-9	12-10	12-11	13-0	13-1	13-2	13-3
8	13-6	13-7	13-8	13-9	13-10	13-11	14-0	14-1	14-2	14-3
9	14-6	14-7	14-8	14-9	14-10	14-11	15-0	15-1	15-2	15-3

The data of this table are from a study which was done by the writer. Two Kindergarten classes for the years 1963-1964 and 1964-1965 were used. All birthdates were calculated to the day after Labor Day--the traditional first day of school.

This study was replicated in 1971-1972 with the second and the fifth grades. The age equivalency on both cases was identical within hundredths of a month.

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